NOTE TO EDITORS: The pressing problem of future forests requires thoughtful attention on the part of the public. The President in his proclamation designating American Forest Week has asked for everybody's help in furthering right action. This pamphlet may be of use to you in the preparation of editorials and feature stories, and in other ways, during the 1927 American Forest Week and through the year.

U. S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FORESTRY FACTS

A Compendium of Short Items, Paragraphs, and Handy Information for Use by Newspapers and by Speakers, Teachers, and Others Interested in Renewing and Perpetuating America's Great Heritage of Forests

AMERICAN FOREST WEEK

APRIL 24–30, 1927

HISTORY OF AMERICAN FOREST WEEK

The idea of devoting seven days in the year to forestry education originated on the Pacific coast in 1920. President Harding in 1921 issued the first proclamation which brought the Federal Government behind the idea. President Coolidge in turn gave the plan his sanction; and presidental proclamations have been issued for seven successive years.

Out of the multifarious "weeks" this is the only one to which the Government has given recognition and support. Many governors have likewise issued special proclamations. At first the week was called "Forest Protection Week," but the breadth of the forest problem led President Coolidge in 1925 to enlarge the scope of the undertaking and change the name to American Forest Week. In 1926 the authorities of the United States and Canada, in view of the international aspect of the forestry problem, jointly agreed that the week should be celebrated concurrently in the two countries. In Canada the week is known as "Save the Forests Week," but its observance is essentially of the same character as in the United States. This joint observance by the two countries is continued in 1927.

WHAT IT IS

American Forest Week is an annual call to all citizens, young and old, to take part in bringing about better forest conditions. The American Forest Week Committee, of which Hon. Frank O. Lowden, of Illinois, is general chairman, is composed of nearly 100 organizations representing almost every conceivable form of interest—the Federal Government, State governments, outdoor, wild life, and recreational interests, foresters and forestry associations, the lumber in-

28238°—27 M–5026

dustry, large consumers of forest products, labor, groups interested in water resources, scientific and civic organizations, women's organizations, and a host of others.

American Forest Week is all inclusive, for its purpose is to give opportunity for every form of interest in trees and forests to find expression, each in its own way. The end it aims at is that the general welfare may be promoted through the taking of common counsel, the formation of intelligent public opinion, and the stimulating of action, individual and collective, under the impulse thus given.

American Forest Week is not a tool for advancing the views or serving the purposes of any special group or organization. It does not identify itself with any particular measures or program, but seeks to make known facts and to promote discussion from every angle. It has no goal other than that which a rightly informed public opinion may of itself set up and seek. It is strictly and wholly educational in plan and purpose.

THE SHRINKAGE IN OUR TIMBER SUPPLY

Enormous virgin forests concealed for many years the timber supply problem of the United States. Fully 90 per cent of the cut of high-grade saw timber is still being taken from stored supplies in the remaining virgin forest. But our virgin forest area, originally 822 million acres, has, chiefly during the last 50 years, been reduced to 125 million acres. Of an original stand undoubtedly far exceeding 5,200 billion feet board measure, only 1,600 billion feet of virgin timber remain. On some 250 million acres of cut and burned over lands second-growth forests, occurring largely in scattered, broken, volunteer stands of relatively inferior size and quality, contain an additional 600 billion feet of saw timber.

We must have timber in the future for the maintenance of high American standards of living and continued industrial development. The shrinkage in our supply is going on at a tremendous rate. We can not hope except in small part to meet our demands either through substitution of other materials or through imports. The maintenance of even present levels of total consumption will entail drastic reduction of per capita consumption. On the entire area of our forest land nature, largely unaided except during the last two decades, is now replacing the annual drain by new growth to the extent of only one-fourth. This growth must be increased as rapidly as possible to the full growing capacity of our forest land.

WHAT REFORESTATION MEANS

Reforestation means the renewal and perpetuation of tree growth. In the main, its object is to rear and harvest on the same land, in an unending round, successive timber crops. Unlike many natural resources, forests can be used and regrown forever and forever. Continuous production of tree crops on land best suited for that purpose is the aim of forestry.

President Coolidge, in a speech before the National Conference on Wood Utilization, said:

"Strange as it may seem, the American people, bred for many generations to forest life, drawing no small measure of their wealth from the forests, have not yet acquired the sense of timber as a crop. Immense stretches of cut-over land, mostly too rough or too sterile for tilling, have not awakened us to their vast potential worth as growers of wood. Fully one-fourth of our land area ought to be kept in forest—not poor dwindling thickets of scrub, but forests of trees fit for bridges and houses and ships."

IDLE LAND

Waste and worthless land is worse than a dead loss. It is a drag on the community. Land skinning leads to decline in industry, wealth, population, and public revenues. It depresses agriculture and causes social retrogression. Permanent prosperity must be based on permanent resources, fully and wisely used.

Timber growing must be the mainstay of regions in which this represents the highest use to which the bulk of the land can be put. The sooner it is begun the better for everybody. Tree crops not only put money in circulation in the form of wages to woods workers and sawmill hands but also attract other industries. Productive forests are an economic necessity. Our 80,000,000 acres and more of idle forest land and the much larger acreage of second-growth and cut-over land now left wild and without care, to produce what it will, are a reproach to our intelligence. Not even so rich a country as the United States can afford such waste.

WE NEED TIMBER

Abundant timber of suitable quality at reasonable prices is essential for national development and high standards of living. The products of the forest—lumber, fuel wood, ties, mining timbers, naval stores, and paper, as a few examples only—are used directly or indirectly in practically every human activity. So much of this use is indirect, however, and so much of the direct use is taken as a matter of course that Americans generally underrate the real need for wood. We could undoubtedly exist without wood just as without steel, cement, or coal, or without such food products as wheat, but the losses in lowered standards of living and in the restriction of industrial development would be almost incalculable. Picture, for example, the American home without lumber, the American farm without wood fuel, any American industry without wooden or fiber boxes for shipping its products or without lumber for a myriad of uses, our coal mines without mine props, our railroads without wooden ties, the American people without newsprint. It is evident that abundant timber supplies are vital to our national well-being.

HOW THE NATIONAL TIMBER SUPPLY PROBLEM MUST BE MET

The timber-supply problem is primarily a land problem. Forest land should produce timber crops. The United States contains 470,000,000 acres of land which foresters classify as forest land and which will not be needed for other agricultural crops. If all this acreage were producing trees at maximum capacity the United States would have no serious timber supply problem.

Unfortunately, at least 80,000,000 acres out of the 470,000,000 is in a nonproductive condition. In fact, much of this idle forest land must be artificially planted if it is ever to grow trees again. To put all of the country's forest land at work producing timber requires, for one thing, adequate public systems of protection from forest fires. It requires also the adjustment of taxation values so that private landowners can afford to grow timber for a number of years during which no revenue can be expected. Most of all it depends on stabilizing the ownership of forest land, particularly through the establishment of more State and municipal forests under forest management and the adoption by more private timberland owners of a policy of permanent retention of the land with consequent consideration of forest management as a form of land use.

A GREAT DOMESTIC PROBLEM

The United States is using up its timber supply four times as rapidly as that supply is being replaced through growth. The present rate of drain upon the Nation's forest resources is not likely to decrease. On the contrary, although our per capita consumption is now falling, our wood requirements will probably increase as our population grows.

This unbalanced condition between timber consumption and timber replacement creates a great domestic problem which can be solved only by larger timber crops. To produce adequate timber crops all of America's forest land—470,000,000 acres—must be put to work growing trees, and kept at work to its full capacity. That forest management is practicable has been demonstrated by owners of woodlands in all sections of the country. It is necessary to get all owners to undertake timber growing as soon as possible.

FOREST FIRES AND GAME

Forest fires sweep across the nesting grounds of grouse and other game birds, destroying eggs and young birds. Fires destroy the forage upon which big game animals live. When fires occur late in the fall big game animals, especially deer, suffer during the following winter and frequently die of starvation. Fires spoil the fishing, for good fishing depends upon clear waters, and when the forest is destroyed by fire the resulting erosion muddies the streams and lakes and puts an end to good sport. If sportsmen realized how birds and animals are driven out by fire, how coverts and nests are destroyed, and how much food for wild life goes up in smoke when the forest burns, they would observe the utmost care with camp fires, smokes, and firearms when in the woods.

Forest fires destroy lumber, injure labor, kill industry, rob the community, and increase taxes.

FOREST LAND OWNERSHIP

Unstable forest land ownership is to-day the greatest single obstacle to the rapid spread of timber growing throughout the country. It is represented by the land speculator, or the lumber company which intends to dispose of its holdings when cut over, or the State without a policy of permanent forestry for its timberlands, or the State, county, or town which is anxious to have tax-reverted lands chiefly valuable for timber growing put back on the assessor's rolls. If all or most of the 470,000,000 acres of forest land in the continental United State—close to one-fourth the entire land area—were in the hands of owners whose future returns rested on actual use of the land, the Nation's forest problem would be much nearer solution.

The ownership of our forest land is in round numbers as follows:

	Acres
Federal Government	89,000,000
States	10,500,000
Municipalities and counties	700,000
Private owners, large	220,000,000
Private owners, small	150,000,000

From the standpoint of stability, the holdings of municipalities, small private owners, and the Federal Government rate relatively high. State holdings vary from highly stabilized to wholly unstable. Large private holdings are in the main unstable, but with strong evidence of a trend toward greater stability. This trend constitutes the most significant feature of the present forest situation in the United States.

Ultimately it is probable that public ownership and stable management of at least one-third of the total forest area of the country will be found advisable. Under laws now on the statute books the present national forests should be consolidated, extended over the remaining public domain that is valuable chiefly for timber production, and enlarged, through purchase, in regions where serious forest denudation must be overcome or national interests like the conservation of water flow protected. It is not desirable, however, to purchase additional Federal holdings in regions where local needs can be met by State or municipal (town and county) forests or by the extension of farm and industrial forestry.

State and municipal forest holdings now fall far short of the extent desirable if not imperative in bringing general stability into our forest-land ownership as a whole. Since municipal forests are not likely to reach a large aggregate area, it is to the extension of State forests that special attention and effort should be directed.

Unstable private ownership of forest land needs to be thoroughly studied. Present knowledge of its extent, the specific reasons for it, and what can be done to lessen it is inadequate.

Economic conditions are tending to replace unstable ownership with stable, and other influences also are working toward a change in the situation. Not so long ago nearly all large private holdings of forest land were in unstable ownership, in the sense that the owners did not contemplate permanent retention of title. The changing attitude of the forest industries and timberland owners in this matter is very significant. Open-minded lumbermen are coming to see that if they accept in good faith the idea of self-government in industry they must not ignore the public responsibility created by land ownership. And as business men they are increasingly ready to consider carefully the methods of forestry in handling their timberland holdings.

THE FOREST-FIRE MENACE

Fire is the greatest single enemy of the forests. The United States Forest Service places the average annual number of forest fires in the entire United States during the past 10 years at 51,000. The average area swept by fires each year stands at 15,000,000 acres, of which 11,800,000 acres is forest land. The annual damage runs up to $20,000,000, exclusive of damage to young growth, watersheds, and recreational facilities, and other damage the money value of which can not be estimated.

The outstanding fact about forest fires is that 90 per cent of them are man caused. When the American people stop burning their wooded areas the solution of the Nation's timber supply problem will not be far off.

Besides being a source of cash income to the farmer, a home supply of timber on the farm means that necessary repairs and new construction can be made when needed, and the farm operations kept up to a high standard of efficiency.

TIMBER GROWING BY THE FEDERAL GOVERNMENT

The Federal Government is and always has been far and away the largest forest owner in the country. Men still living can remember the time when most of the southern pine lands, a large part of the Lake States forests, and nearly all the timber in the far West was owned by the Nation. After many years during which these forests were ravaged by colossal fires, plundered by timber thieves on a huge scale, and freely disposed of under the various public land laws, 36 years ago Congress authorized the creation of "forest reserves."

In 1911 Congress authorized the purchase by the Government of privately owned forest lands on the watersheds of navigable streams which bore a direct relation to the navigability of such streams. And in 1924 this authority was broadened to permit the purchase of forest lands for continuous timber production. Such lands must be within the watersheds of navigable streams, but the establishment of a direct relationship to navigability no longer is required.

Under the law of 1891 and supplementary laws nearly all the remaining public-domain lands best adapted to permanent forest use have been included in national forests. On the watersheds of navigable streams over 2,600,000 acres of land have been purchased by the Government, and the eventual purchase of between 3,500,000 and 4,000,000 acres more is contemplated. Under the law of 1924 a purchase program for the Lake States and the South has been formulated by the Forest Service through which 2,500,000 acres would be acquired in each region.

If this receives final sanction and the necessary appropriations are made for buying all the land included under the two acquisition programs, the Federal Government will eventually be growing timber on about 95,000,000 acres, or about one-fifth of our 470,000,000 acres of forest land.

Besides their timberlands the national forests created from the public domain contain a large acreage of brush and grass lands, woodlands supporting sparse and inferior tree growth unsuitable for saw timber, and rocky barren lands. Most of these lands are held primarily for watershed protection.

The cut of timber from the present national forests is about 1,000,000,000 board feet a year. The cut expected when the forests have been brought up to their full sustained yield is from 6,000,000,000 to 7,000,000,000 feet. The country now uses about eight times this quantity. In general, the best lands for tree growing are not included in the national forests but are in private ownership.

FORESTS ARE MORE THAN TIMBER

The use of forest land should not stop with the growing of timber. We can, as well as not, derive from it large additional services of several kinds. Forest lands are natural recreational areas, many of them occuring in the more remote and mountainous districts, and forest cover constitutes one of their greatest charms. They can be made to better the national health, through outdoor recreation, and to supply food in the form of game. Wild life of all kinds will add to their appeal. The water power which is now, and will be even more in the future, one of our outstanding resources, depends largely upon forest growth for the regulation of stream flow and the prevention of silting in reservoirs. Water supplies for irrigation also depend upon a permanent forest cover.

The forest problem of the United States is one of our outstanding social and economic problems. It is not too much to say that we must have timber and that we must use the land. Fortunately the solution of both these phases of the forest problem lies in one and the same measure, the growing of timber on this land. Magnificent virgin forests have shown the possibilities; our task is to help nature repeat what she has done and improve upon it. We can also produce game for food, create opportunities for recreation, and insure the maximum utility of streams for navigation, water power, and irrigation.

TREE-PLANTING STOCK DISTRIBUTED

During the year ending June 30, 1926, more than 25,000,000 trees produced in State forest nurseries were distributed to farmers; 13,000,000 were distributed to planters other than farmers; and 14,000,000 were planted on State lands. At the rate of 1,000 trees to the acre the total output of State nurseries during the year was enough to put 52,000 acres of idle land to work. The total area needing reforestation through planting, however, is more than 80,000,000 acres.

FORESTRY PROGRESS UNDER THE CLARKE-McNARY LAW

The Clarke-McNary law, which became effective July 1, 1925, provides for formulating protective measures to keep forest lands in each State productive, for protecting timbered or forest-producing lands or watersheds from fire, and for promoting the practice of forestry on farms. In all these activities the law directs the Secretary of Agriculture to cooperate with appropriate State officials. The object of this cooperation is to promote forest production on the 80 per cent of the total forest area of the country that is privately owned, through united efforts of the Nation and the States. Forty-one States and the Territories of Hawaii and Porto Rico are now cooperating with the Government in one or more of the activities for which the law provides.

The most urgent work promoted through the Clarke-McNary law is forest-fire protection. Under its provisions there are available for this purpose in the present year a Federal appropriation of $710,000, State funds amounting to $2,000,000, and $557,000 in private funds that are to be disbursed directly by the State forestry officials or under their supervision.

In order to stimulate reforestation, forest tree planting stock is made available to farmers. Primarily as the result of the offer of cooperation by the Federal Government under this section of the law, 14 States have in the past two years developed or begun to develop their first forest nurseries. Cooperation in this field has been accepted also by 18 States previously distributing planting stock, which have thus increased their output, and by Porto Rico and Hawaii. This work is particularly directed to assisting farmers in establishing windbreaks and shelter belts and in developing farm woodlands. In the past such work has been largely neglected by farmers, at least partly because they could not afford to pay the prices charged for planting stock. The States and the Federal Government are producing small trees in quantity for distribution by the State officials at the lowest possible expense to the farmer. During the year ending July 1, 1926, the farmers of the cooperating States were in this way supplied with more than 25,000,000 little trees.

The Clarke-McNary law combats another obstacle to farm forestry by providing for instruction and assistance to the farmer in planting and caring for timber. It has made forestry a part of the agricultural extension activities under a cooperative plan that has been accepted by 30 States. Extension foresters assist in providing the subject matter and work out plans to help county agricultural agents and local leaders enlist widespread interest in forestry as a phase of diversified agriculture. Demonstrations with special emphasis on the satisfactory results achieved are means by which the extension services present forestry to the public. Field trips, lectures, publications, and news items are also used. The satisfactory care, improvement, and management of farm woodlands, simple methods of measuring timber, the principles of marketing timber, the planting of farm forests and windbreaks, and the preservation of farm timbers are some of the phases of forestry that are presented to the farmer in this way.

Not only are these subjects taught and demonstrated to the owners and operators of farms, but forestry projects for boys and girls have been adopted as a definite part of the work of 4–H clubs.

In addition to these activities, under the Clarke-McNary law studies are being made of fire-protection measures necessary to make forest lands productive in each State, and the results of these studies are being prepared for publication. Also, work has been begun on a study of forest taxation. This study is of great importance; uncertainty as to whether timber can be grown at a profit under existing taxation laws has greatly retarded the adoption of forestry practice by private landowners.

Although the Clarke-McNary law has been in operation less than two years, it has already produced encouraging results. Whether the work is to go on with increased effectiveness depends largely on whether it is supported by public opinion, not only in the Nation at large but also locally in each State.

Protection against fire is the most important single forest problem. Its solution rests in an enlightened public sentiment. According to Lincoln, "Public sentiment is everything. With public sentiment nothing can fail; without it, nothing can succeed. Consequently, he who molds public sentiment goes deeper than he who enacts statutes or pronounces decisions. He makes statutes and decisions possible or impossible to be executed."

TIMBER GROWING BY THE STATES

Twenty-two States have established State forests; 14 of the States have also State parks; 10 have State parks but no State forests; and 36 States own forest lands which are not under either form of administration. Hawaii and Porto Rico, also, have State forests, and Porto Rico has other forest land in government ownership. All told there are about 6,000,000 acres of State forests, 368,000 acres of State parks, and 4,700,000 acres of other State forest land. The table on page 16 shows the situation State by State.

It might seem from these figures that timber growing has been rather widely undertaken by the States. In reality few States have definitely gone into it. A number of the State forests are the result either of gifts or of special purchases that do not indicate a general policy. Considerably more than half the total area of State forests is in New York and Pennsylvania. Nor does the establishment of a State forest always mean that timber crops will be grown and harvested. New York prohibits timber cutting on her 2,000,000 acres of State forests, so that they are really State parks.

Pennsylvania furnishes the outstanding example of timber growing. The purchase of forest lands was authorized in 1897 and has gone on until the State forests now contain 1,130,000 acres, the great bulk of which will be devoted primarily to wood production. A pending constitutional amendment if approved by the people will provide for a bond issue of $25,000,000 with which to buy approximately 5,000,000 acres more.

New Hampshire, Vermont, Massachusetts, Connecticut, New Jersey, and Ohio are other States in the East that are consistently building up State forests for timber growing through land purchase. The only State in the South that has as yet adopted such a policy is Texas. Wisconsin's 97,000 acres of State forests were mainly acquired by purchase.

Michigan's 333,000 acres of State forests, on the other hand, are primarily derived from tax delinquencies, and Minnesota's 350,000 acres chiefly consist in lands granted the State by the Federal Government.

State timber growing on any considerable scale calls for reasonably solid blocks of land, not widely scattered small parcels. In South Dakota, Montana, Idaho, and Washington land exchanges between the Federal Government and the States have been put through under which scattered school sections within the national forests have been surrendered and in their place the States have received blocks of forest land of equal value. State timber growing is getting its start in the West in this way.

A State policy of using tax-delinquent lands as a basis for similarly blocking out areas suitable for administration is one of the means by which in some States timber growing can be extended. The nucleus of New York's Adirondack State forest was 600,000 acres acquired through nonpayment of taxes by owners of cut-over land.

As the desirability of State forests, from the standpoint of public recreation as well as for growing timber, becomes better understood their number and size will undoubtedly increase materially. In the course of time they are likely to become factors of real importance in the meeting of local timber requirements.

Both for the inauguration and for the successful conduct of State timber growing a competent State forestry department and a strong public interest are essential.

MANY STATES MAINTAIN TREE NURSERIES

Thirty-three States maintain forest-tree nurseries that distribute planting stock to citizens at low cost. In a few States the only cost is the transportation of the seedlings from the nursery to the landowner who wants to increase the value of his land by planting tree crops.

New York State maintains the largest forest-tree nurseries. This State distributed 20,000,000 trees in 1926 and plans to increase the number to 40,000,000 trees in 1927.

Pennsylvania distributed upward of 10,000,000 trees from the State nurseries last year and expects to produce 20,000,000 trees for distribution in 1927 in order to keep up with the demand from farmers and small landowners.

The United States Forest Service is cooperating with 32 States and also with Hawaii and Porto Rico in the production and distribution of forest-planting stock for farmers. Small trees for forest planting can be secured free or at very low cost from the State foresters or other State officers. American Forest Week, April 24–30, is a time to bring tree planting to the fore.

HOW TO AVOID CAUSING A FOREST FIRE

It is not difficult for anyone to be careful with fire while in wooded areas. Here are a few simple rules which if observed will go far toward reducing the appalling number of man-caused forest fires reported every year.

1. Matches—Be sure your match is out. Break it in two before you throw it away.

2. Tobacco—Be sure that pipe ashes and cigar or cigarette stubs are dead before throwing them away. Never throw them into brush, leaves, or needles.

3. Making camp—Before building a fire scrape away all inflammable material from a spot 5 feet in diameter. Dig a hole in the center and in it build your camp fire. Keep your fire small. Never build it against trees or logs or near brush.

4. Breaking camp—Never break camp until your fire is out—dead out.

5. Brush burning—Never burn slash or brush in windy weather or while there is the slightest danger that the fire will get away.

6. How to put out a camp fire—Stir the coals while soaking them with water. Turn small sticks and drench both sides. Wet the ground around the fire. If you can't get water stir in dirt and tread it down until it is packed tight over and around the fire. Be sure the last spark is dead.

EFFECT OF CUTTING OUT TIMBER

The effect of the cutting out of timber on an industry that is of first importance in a region is strikingly brought out by census figures in regard to the number of sawmills operating in the Lake States. In the year 1899, 234 mills in the Lake States were cutting annually more than 10,000,000 feet of lumber each. In 1924 only 83 mills in this region reported an annual cut of that amount. In the same period of 25 years the number of Lake States sawmills cutting from 1,000,000 to 10,000,000 feet annually declined from 645 to 102. When a mill stops operations its pay roll stops, its tax payments to State and community government drop off, and the other industries and the homes that depend on the mill are cut off from their means of existence. Permanent forest industries and permanent forest communities depend upon timber growing for permanent supplies of raw materials.

STATE FORESTRY DEPARTMENTS

Thirty-nine States and Porto Rico and Hawaii now have forestry departments or other agencies charged with looking after their forestry interests. Many of the State forestry departments are highly developed; others are just beginning their work.

The States maintaining forestry officials are:

Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and Maryland.

Virginia, West Virginia, Kentucky, Tennessee, North Carolina, Georgia, Alabama, Mississippi, Louisiana, and Texas.

Ohio, Indiana, Illinois, Michigan, Wisconsin, and Minnesota.

North Dakota, South Dakota, Nebraska, Iowa, Missouri, Kansas, and Oklahoma.

Colorado, Idaho, Montana, Washington, Oregon, and California.

Usually the most important duty of a State forestry department is the protection against fire of a part or all of the forest lands within the State. A forestry department is usually responsible also for the administration of State forests, and in some cases is intrusted with the selection and acquisition of lands to be developed as State forests. Another of its functions is to give out information on timber growing and the forest needs of the State and to furnish advice and assistance to landowners who have put their land under forest management or wish to do so. Most of the State forestry departments maintain tree nurseries in which forest planting stock is produced for distribution to the people of the State.

The table on page 16 gives the more important statistics concerning State forestry work.

Thirty-three States, in cooperation with the United States Forest Service, now maintain forest-fire control systems. The amounts expended in this work by the cooperating States last year was $1,611,380. Twenty-four States have adopted special tax laws to encourage the growing of timber crops.

Forests produce timber much more rapidly under forest management than in the wild, virgin state. A good stand of Douglas fir in western Oregon or Washington under management will produce merchantable saw timber in approximately 60 years.

AT LEAST 250 TOWN FORESTS IN THE COUNTRY

The Forest Service, United States Department of Agriculture, is authority for the statement that not less than 250 cities and townships in the United States own and maintain municipal forests. The gross area of these town forests exceeds 500,000 acres. They are located in 26 States.

Often the prime purpose of the municipal forest has been the protection and conservation of municipal water supplies. Land surrounding reservoirs, lakes, or streams has been purchased and parts lacking tree growth are being planted. Fully 40,000,000 trees have already been thus planted.

Municipal forests often provide local recreation areas. A few have begun to return cash revenues as well. As the years go by the cash revenues will be larger. These town forests are good investments.

Since American Forest Week, April 24–30, has been set aside by President Coolidge as a time to think about America's forest problem, why not give some earnest thought to this matter of town forests?

CUTTING SMALL TREES FOR LUMBER UNPROFITABLE

According to studies made by foresters in the Lake States and in the South, small trees are in many instances being felled and sawed into lumber at a loss, thus depleting the forest capital in growing trees and at the same time losing money for the operators who cut them. According to Raphael Zon, director of the Lake States Forest Experiment Station, hardwood logs below 13 or 14 inches in diameter are being produced and milled in that region at a loss. According to W. W. Ashe, of the United States Forest Service, who made studies in the South, two trees standing side by side may be cut by the same mill and one tree make a profit of $25 a thousand board feet while the other, smaller, tree shows a loss of $12. In both cases the reason is that it costs more to produce lumber from the small logs and the product sells at a lower price. Many operators know only the average returns from logging and milling; and the profit made on the big log hides the loss on the small one. By checking the time required for felling, cutting, skidding, and hauling the logs, sawing at the mill, and other parts of the process of turning trees into lumber, the loss on the small trees is revealed.

Leaving small trees in the woods not only would increase present profits but would be a means of providing greater future profits, for the smaller trees when released from competition for light and soil moisture by the removal of the larger trees would increase in size and value at a rapid rate. Thus new crops of timber would be provided and the sawmill owner enabled to continue his operations on a permanent basis.

OUTDOOR GOOD MANNERS

It is too bad that the visitor to the forest does not more often carry with him the good manners and consideration for others that he practices at home. He should know that it is unpardonable to throw down the lighted match or cigarette in the forest, just as well as he knows he must not throw tin cans and old clothing into the street at home. He should learn how to behave in the forest just as he learns it for the drawing room. The smoker would not throw his match or cigarette stump or empty his pipe on his host's rug or table cover, but, without giving it a thought, the same smoker tosses a burning match or ashes on the floor of his host, the forest, where it threatens property worth millions and even human lives.

Thirty-three States are making definite efforts to protect private and public forest land from fire, the arch enemy of the forests. Under the provisions of the Clarke-McNary Forestry Act the Federal Government actively cooperates with States and private landowners in protecting forest land from fire.

Is your State among the list of cooperators, or it is still drifting? American Forest Week, April 24–30, is a good time to look into this question.

Only a remnant of the original forests of the East remains, and nearly half of the virgin forests of the South and West have gone. An active intelligent interest in America's forest problems, participated in by all citizens, is needed to carry out a definite national forestry policy for the United States.

PREVENTABLE TIMBER WASTE

More than 15,000,000,000 cubic feet of wood out of the total of 22,000,000,000 cubic feet removed annually from the forests of the United States is wasted, according to estimates made by the Forest Service.

The waste begins in the woods. Trees are unnecessarily broken in logging. Felled trees are often poorly divided into log lengths. Small trees and poor trees are left to rot in the woods. The waste continues in the sawmill. In order to get high-speed sawing, saws with wide kerf are often used, with the result that good material goes into the sawdust pile. About one-third of all lumber is cut by circular saws with wide kerf. The use of thoroughly efficient portable bandsaw equipment in small sawmills would effect vast economies in lumber manufacture. A large proportion of the contents of logs is lost in slabs and edgings some of which might be utilized. The development of machinery to handle small pieces would aid in the use of large quantities of material that now goes to waste. There is waste in the remanufacture of lumber. Approximately half of our total cut is remanufactured into such products as sash and doors, boxes and crates, furniture, vehicles, tanks, silos, and agricultural implements. Much waste could be prevented in such remanufacture of lumber by selecting raw material especially suited to making the finished product and by better methods of seasoning and manufacture. There is waste also in the use of lumber in general construction. Clear stock is demanded by consumers for purposes for which lower grades would be entirely suitable, or even lengths and widths for purposes for which odd lengths and widths would do as well, or long lengths for uses for which short lengths are just as good or better. The preventable waste does not stop with the finished product; every year great quantities of timber that could be saved by the use of preservatives or by better methods of building construction are lost through decay.

Out of the total annual waste of 15,300,000,000 cubic feet, it is estimated that by the application of present knowledge to commercial operations 5,340,000,000 cubic feet could be saved. The biggest single item of saving estimated to be possible under present conditions is the 1,750,000,000 cubic feet of wood that by preservative treatment could be saved from decay. Other estimates of possible savings are 670,000,000 cubic feet in logging 500,000,000 cubic feet in milling operations, 670,000,000 cubic feet in seasoning, 750,000,00 cubic feet in the use of small dimension stock, and 1,000,000,000 cubic feet in miscellaneous ways.

THE REGIONAL FORESTS

The forests of the Lake States and of the higher Appalachians were originally composed largely of eastern white pine, Norway pine, and spruce, with admixtures of beech, birch, maple, hemlock, and other species. In the central forest region the characteristic species were oak, yellow poplar, chestnut, walnut, ash, elm, maple, hickory, red gum, and other hardwoods. In the southern forest region the timber is chiefly of longleaf, slash, shortleaf, and loblolly pine, but the alluvial bottom lands bear heavy stands of oak, hickory, ash, sycamore, soft maple, red gum, yellow poplar, etc., while the lower mountain slopes are covered with hardwoods like those of the central region.

During the first 300 years of white settlement of the country the most popular of all these woods for lumbermaking purposes was the white pine which was found from Maine to Minnesota and along the crest of the Alleghenies even so far south as Georgia. The original forests of this magnificent tree are nearly gone, but there is a certain amount of replacement. Since 1900 the yellow pines of the South have largely succeeded white pine in building and industry.

The Rocky Mountain forest is typically one of western yellow pine, so far as commercial importance is concerned. Among the other conspicuous species are spruces, firs, western white pine, lodgepole pine, and aspen.

The Pacific coast forest boasts the largest trees and the densest timber stands in America. The big tree and the redwood of California grow to more than 300 feet in height and 25 feet in diameter and are closely followed by the huge Douglas firs of Washington and Oregon. The Pacific coast forest also includes white and yellow pine, several species of true firs, western hemlock, Sitka spruce, red cedar, and Port Orford cedar.

"The forests of America, however slighted by man, must have been a great delight to God, for they were the best He ever planted."—*John Muir.*

FOREST RESEARCH NEEDED

The forests of the United States range over a distance of 1,600 miles north and south and 2,800 miles east and west. They range in altitude up to 6,700 feet above sea level in the East and 12,500 feet in the Sierras of California. The United States has 850 distinct arborescent species, of which 65 are of first commercial importance. With such riches in tree species, and such a variety of conditions under which they grow, we need to know much more about the most effective and economical means of growing and protecting timber and of utilizing it after it is grown. If our forests are to meet the growing timber needs of the country, we need to put more thought into the encouragement of forest research by public agencies and by educational and other institutions. Forest experiment stations, laboratories, and other research agencies supply the forester and the timberland owner with information, based on scientific study, which he can apply with confidence to the production of larger and better crops of timber and to more efficient and economical utilization of wood and wood products.

LUMBER CUT

According to data collected in the census of manufactures, 38,338,641,000 board feet of lumber was produced in the United States in 1925, an increase of 6.7 per cent over the cut of 35,930,986,000 feet in 1924. Alabama, Arizona, Georgia, Idaho, Mississippi, New Mexico, Oregon, and Washington delivered the greatest cut of lumber in their history. Washington, with a cut of more than 7,000,000,000 feet, led all the States in production, as it has every year since 1905 with the exception of the year 1914, when Louisiana led. Southern yellow pine, as in previous years, furnished the greatest quantity, 13,235,936,000 feet, or 34.7 per cent of the total. Douglas fir came second with 8,154,373,000 feet, or 20 per cent. Western yellow pine, hemlock, oak, white pine, and red gum followed in the order named.

The area in the United States where trees once grew but where nothing now grows is as large as the States of New York, Pennsylvania, New Jersey, Delaware, and Maryland combined. It is larger than the combined forest lands of Germany, Belgium, Denmark, Holland, France, Switzerland, Spain, and Portugal.

TIMBER TREATED WITH PRESERVATIVES

In 1925 a total of 167 treating plants in the United States were actively engaged in treating wood with preservatives to prevent decay. The gain in plant capacity since 1920 is nearly 50 per cent. In 1925 the treating plants consumed 167,642,790 gallons of creosote, 13,048,539 gallons of petroleum oil, 2,080,287 gallons of paving oil, 26,378,658 pounds of zinc chloride, and 331,591 gallons of miscellaneous preservatives. The total quantity of wood that was given preservative treatment during the year was 274,474,538 cubic feet, or more than three and one-half times the quantity reported in 1909.

"The end of free timber is in sight. World competition for the world supply will leave no large dependable source of imports open to us. The use of substitutes hardly keeps pace with new uses for wood; there is no likelihood that we can become a woodless nation even if we wanted to. When the free timber is gone, we must grow our wood from the soil like any other crop.

"* * * Fully one-fourth of our land area ought to be kept in forest—not poor, dwindling thickets of scrub, but forests of trees fit for bridges and houses and ships. Handled by the best timber-cropping methods, our present forest lands could be made to grow even more timber each year than we now use. But much of our cut-over land, lying idle or half productive, is now an immeasurable loss. It pays little or no taxes, it keeps few hands busy, it turns few wheels, it builds no roads. Idle forest land has scrapped schools, factories, railroads, and towns; it has dotted the land with abandoned farms; it has created a migratory population. Our forest problem is a land problem of the first magnitude."—*Calvin Coolidge.*

"We are the biggest wood users on the face of the earth. The people of the United States actually use two-fifths of all the wood consumed in the world. I see no chance for an early abandonment of the wood-using habit. The way out of this situation is clear. We have been—and I hope we can continue to be—a Nation of wood users, but to enjoy this privilege and the prosperity that goes with it we must become a Nation of wood growers."—*Gifford Pinchot.*

The land is our capital; its products our dividends. Don't burn the interest.

PULP AND PAPER

The pulp and paper industry ranks next to lumber as a forest industry. It employs 150,000 persons, and its output is valued at $800,000,000 annually. In 1925 the United States produced more than 3,900,000 tons of paper pulp, requiring 6,000,000 cords of pulpwood. More than nine-tenths of all our paper comes from wood pulp. As paper has become one of the indispensable commodities of civilized life, it has created a new dependence on the forests.

Preliminary figures issued by the Bureau of the Census show an increase in the use of southern yellow pine for pulpwood from 427,961 cords in 1924 to 531,157 cords in 1925. This increase, approximately 24 per cent, is concrete evidence of the growth in the South of the pulp and paper industry, one of many industries dependent on a continued local supply of timber.

Stumpage prices of second-growth southern pine timber show an interesting gradation from high prices in those States near the large consuming markets of the north and central Atlantic coast to much lower prices farther south. The average price which in Maryland is $8.97 per 1,000 feet log scale drops to $5.60 in Virginia, $5.27 in North Carolina, $4.02 in South Carolina, and $3.41 in Georgia. This is a clear-cut example of the effect of distance between market and timber upon the price of standing timber. It is also an indication of the advantage of near-by supplies of timber. For any forest region, State, or community to fail to keep its forest lands at work producing timber is to throw away this advantage.

With 65 per cent of the industrial pay roll of the States of Washington and Oregon dependent upon timber industries, it is highly important that new crops of timber be grown to take the place of those now being cut. This is largely a matter of protecting from fire the young tree growth which will follow naturally after logging if fire is kept out.

The State Legislature of Illinois, in 1925, appropriated $100,000 to be used over a period of two years for the purchase of lands for State forests, and State forestry officials are now working on a purchase program.

LUMBER HAULED LONG DISTANCES

The average rail haul of lumber from place of manufacture to place of use has practically doubled in the United States in the last dozen years. In 1914 it was estimated at 360 miles, in 1924 at 700 miles. Many important sections of the country that under present conditions are not reached by water transportation and can be served only by rail traffic will become increasingly dependent upon softwoods from the Pacific Northwest as eastern and southern supplies decline. It appears that such regions must eventually pay very high freight charges unless timber growing is developed in neighboring forest regions on a much greater scale than it is today.

"The forest acreage in the United States is approximately 470,200,000 acres. With such generous forest resources, we have been prone to consider the supply of forest materials inexhaustible. The constantly increasing demands to meet our growing needs, however, and the destruction of forests by fire are arousing apprehension that in the comparatively near future industry may be handicapped for lack of forest products."—*Calvin Coolidge.*

The total tonnage of products of the forest on American railways in 1923 exceeded 115½ million tons, which was about 9½ per cent of the total for all materials and brought receipts of nearly $420,000,000. This in spite of the fact that products like fuel wood, which accounts for approximately 40 per cent of our wood consumption, rarely appear in the tonnage reports of our railroads.

In the year of the last census, 215,417 farms in the central hardwood region sold or cut and held for sale forest products valued at $66,446,128, an average of $308 to the farm. The farm woods is an asset well worth careful study and management. It provides not only material for farm repairs and construction but also a money crop.

The acreage of forest land in the United States swept each year by fire is about twice the area annually cut over by logging operations. Foresters estimate that more timber has fallen before the flames than before the ax.

FOREST INDUSTRIES

The forest industries occupy a commanding position in the economic structure of the United States. The capitalization in 1919 of an industrial group consisting of lumber and its remanufacture, pulp and paper, naval stores, natural dye stuffs and extracts, and wood distillation, and excluding a much larger number of smaller related industries which would not materially affect the total, exceeded $3,600,000,000, not including stumpage owned by these industries. The value of the output at the mill of this group reached practically $4,000,000,000 and the wages paid by the group was more than $1,000,000,000.

With the cutting out of our virgin timber, second growth is becoming more and more important and valuable. A study of stumpage prices reveals an upward price trend for second-growth Douglas fir in the Pacific Northwest. Although the sales are small and are confined to accessible tracts, the average price in 1925 of $2.01 per thousand feet log scale indicates the commercial possibilities of this timber. The stumpage price of the second-growth Douglas fir averages only $1.30 below the average price of the virgin timber of the same species.

Each year a line of fire 33,000 miles long and two-thirds of a mile wide eats its scarlet way through our woodlands, striking at the very heart of our national prosperity.

All our prosperity must come from the land. Don't let it loaf.

Have you any idle land? Grow trees.

APPENDIX

AMERICAN FOREST WEEK COMMITTEE

Hon. Frank O. Lowden, chairman.
Edgar P. Allen, managing director.
Shirley Allen, secretary.
Arthur Ringland, treasurer.
Transportation Building, Washington, D. C.

BOARD OF DIRECTORS

Mrs. John Dickinson Sherman, General Federation of Women's Clubs.
William B. Greeley, Forest Service, United States Department of Agriculture.
Wilson Compton, National Lumber Manufacturers' Association.
R. S. Kellogg, National Forestry Program Committee.
Elbert H. Baker, American Newspaper Publishers' Association.
O. M. Butler, American Forestry Association.
Arthur Ringland, National Conference on Outdoor Recreation.
E. T. Allen, Western Forestry and Conservation Association.
A. A. Hood, Concatenated Order of Hoo Hoo.
R. Y. Stuart, Association of State Foresters.

ORGANIZATIONS PARTICIPATING IN THE OBSERVANCE OF AMERICAN FOREST WEEK

Alabama Forestry Commission, American Civic Association, American Engineering Council, American Farm Bureau Federation, American Federation of Labor, American Forestry Association, American Game Protective and Propagation Association, American Institute of Park Executives, American Legion, American Nature Association, American Newspaper Publishers' Association, American Paper and Pulp Association, American Reforestation Association, American Tree Association, Arkansas Honorary Forestry Commission, Association of State Foresters. Associated Advertising Clubs of the World, Associated Technical Engineers, Association for the Protection of the Adirondacks.

Biological Survey, United States Department of Agriculture; Boone and Crockett Club, Boy Scouts of America, Bureau of Plant Industry, United States Department of Agriculture.

California State Board of Forestry, Camp Fire Club of America, Colorado Agricultural College, department of forestry; Concatenated Order of Hoo Hoo, Connecticut Forestry Association, Connecticut State Park and Forest Commission.

Empire State Forest Products Association; Extension Service, United States Department of Agriculture.

Forest Service, United States Department of Agriculture; Friends of the Forest.

General Federation of Women's Clubs, Girl Scouts of America.

Illinois Forestry Association, Indian Department of Conservation, Division of Forestry; Izaak Walton League of America.

Kentucky Department of Agriculture.

Maine State Forest Service, Maryland Forestry Association, Maryland State Department of Forestry, Massachusetts Forestry Association, Massachusetts State Division of Forestry, Minnesota State Forest Service, Missouri Forestry Association, Montana State Forestry Department, Motion Picture Theatre Owners of America, Michigan Forestry Association.

National Association of Audubon Societies, National Association of the Fur Industry, National Association of Manufacturers, National Board of Fire Underwriters, National Catholic Welfare Conference, National Forestry Program Committee, National Grange, National Highways Association, National Lumber Manufacturers' Association, National Nursery Association, National Park Service, Department of the Interior, National Society of Colonial Dames of America, National Society Daughters of the American Revolution, New Hampshire State Forestry Department, New Jersey State Department of Conservation, New York Conservation Association, New York State Conservation Commission, New York State Fish, Game and Forestry League; New York State

Forestry Association, Inc., North Carolina Forestry Association.

Ohio Agricultural Station, forestry division.

Pennsylvania Department of Forests and Waters, Permanent Wild Life Protection Fund, Playground and Recreation Association of America.

Smithsonian Institution, Society of American Foresters, Society for Protection, of New Hampshire Forests, South Carolina Forestry Association, Southern Forestry Congress, Southern National Highways Association, South Carolina Conservation Society.

Texas Forestry Association.

Vermont Forest Service, Virginia State Forestry Department.

Western Forestry and Conservation Association, West Virginia Forestry Association, Wild Flower Preservation Society, Wood Using Industries Association.

Young Women's Christian Association.

STATE FORESTRY ACTIVITIES

State	State forestry appropriation	Estimated yearly cost of adequate forest fire protection	Yearly expenditure in forest fire protection			State nursery forest tree distribution	State forests (acres)	State parks (acres)	Other State forest land (acres)	Municipal and county forests and parks (acres)	State forester or similar officer
			By State and private agencies	By Federal Government	Total						
Alabama	$55,800	$450,000	$37,200	$33,300	$70,500				175,000	19,232	Page S. Bunker, Montgomery.
California	98,700	405,000	132,600	30,000	162,600	11,100		12,845	50,000	7,640	M. B. Pratt, Sacramento.
Colorado	5,000					110,000			126,600	44,449	W. J. Morrill, Fort Collins.
Connecticut	180,600	60,000	23,600	4,400	28,000	1,536,200	20,000	7,000	2,000	15,543	A. F. Hawes, Hartford.
Florida								1,920			
Georgia	10,000	450,000	29,500	10,000	39,500						B. M. Lufburrow, Atlanta.
Idaho	126,900	334,800	218,200	26,300	244,500	94,500	700,000	7,200	200,000	160	Ben E. Bush, Moscow.
Illinois	59,000							1,220		30,578	R. B. Miller, Springfield.
Indiana	13,000					200,500	3,547	4,430	10,500		R. F. Wilcox (acting), Indianapolis.
Iowa						53,100		7,000	5,000		Mark G. Thornburg, Des Moines.
Kansas						66,400		245		200	Albert Dickens, Manhattan.
Kentucky	15,000	225,000	11,500	10,700	22,200	12,400	3,624		15,000		Fred B. Merrill, Frankfort.
Louisiana	60,000	342,200	84,800	25,300	110,100	107,100	2,200		202,000		W. R. B. Hine, New Orleans.
Maine	202,000	450,000	205,800	33,300	239,100	1,866,200	100	25	330,000	835	Niel L. Violette, Augusta.
Maryland	32,200	66,000	16,800	4,900	21,700	236,000	3,835		2,000	14,770	F. W. Besley, Baltimore.
Massachusetts	352,400	170,700	63,000	12,600	75,600	3,862,000	97,000	12,000	48,000	52,603	W. A. L. Bazeley, Boston.
Michigan	401,000	501,100	269,200	37,100	306,300	7,355,300	333,000	7,745	739,000	3,495	Marcus Schaaf, Lansing.
Minnesota [1]	176,200	655,800	232,800	48,600	281,400	236,800	350,000	38,279	650,000	7,635	G. M. Conzet, St. Paul.
Mississippi			30,000	15,000	45,000						Roy L. Hogue, Jackson.
Missouri [2]	2,000	260,000	6,000	6,000	12,000	500		25,500	46,000		Frederick Dunlap, Columbia.
Montana	37,300	195,500	15,500	15,500	31,000		566,000				Rutledge Parker, Missoula.
Nebraska	2,500					33,900		747	500	14,000	Raymond J. Pool, Lincoln.
New Hampshire	94,200	134,300	47,000	10,000	57,000	1,159,500	20,538		575	10,612	J. H. Foster, Concord.
New Jersey	234,800	82,400	75,600	6,100	81,700	1,139,000	18,954	16,000	4,000	35,230	C. P. Wilbur, Trenton.
New Mexico	2,800	18,900	5,400	1,400	6,800				185,000		
New York	2,174,400	388,500	213,700	28,800	242,500	18,172,500	2,026,741	83,212	15,500	170,574	C. R. Pettis, Albany.
North Carolina	23,800	487,500	34,000	34,000	68,000	3,800		1,724	85,600	37,257	J. S. Holmes, Raleigh.
North Dakota	3,100							250	17,300		F. E. Cobb, Bottineau.
Ohio	189,000	27,800	13,100	2,100	15,200	1,506,100	33,773	32,510	22,900	13,867	Edmund Secrest, Wooster.
Oklahoma	5,000	160,000	7,000	7,000	14,000				27,300		Geo. R. Phillips, Oklahoma City.
Oregon	42,500	410,500	181,500	30,400	211,900			640	77,868	166,406	F. A. Elliott, Salem.
Pennsylvania	630,500	393,500	172,600	29,100	201,700	11,566,900	1,131,885	9,541	2,624	14,996	C. E. Dorworth, Harrisburg.
Rhode Island	6,300	14,400	8,700	1,100	9,800					104	Leon D. Andrews, Washington.
South Dakota	6,400	1,500	6,900	100	7,000				80,000		Theodore Shoemaker, Custer.
Tennessee	23,100	250,000	19,900	18,500	38,400				22,110		R. S. Maddox, Nashville.
Texas	49,000	359,200	28,800	26,600	55,400		5,632	550	50,000	1,500	E. O. Siecke, College Station.
Utah									66,000	1,710	
Vermont	37,100	78,800	8,300	5,900	14,200	1,778,500	30,504	160	713	5,963	R. M. Ross, Montpelier.
Virginia	30,000	364,600	27,000	27,000	54,000	48,000	588		1,500	9,700	Chapin Jones, University.
Washington	91,000	425,000	217,900	31,500	249,400	4,200	40,763	6,500	1,200,000	14,964	George C. Joy, Olympia.
West Virginia	45,000	192,500	60,100	14,300	74,400		15,393				A. B. Brooks, Buckhannon.
Wisconsin	64,000	320,900	68,000	23,800	91,800	1,097,000	97,000	91,000	150,000		C. L. Harrington, Madison.
Porto Rico	36,200					434,800	40,000		30,000		William P. Kramer, Rio Piedras.
Hawaii	[3]					356,323	587,228				C. S. Judd, Honolulu.

[1] $50,000 additional is available for fire suppression. [2] No State appropriation. Contributed by Missouri Forestry Association. [3] Figure not available.

WASHINGTON: GOVERNMENT PRINTING OFFICE: 1927